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Ryerson

an Inland Steel company

Material Safety Data Sheet

STAINLESS

I. PRODUCT IDENTIFICATION

Distributor: Joseph T. Ryerson & Son, Inc.

Emergency Telephone: (312) 762-2121

Address: 2621 W. 15th Place

Chicago, Illinois 60608

Chemical Name and Synonyms: STAINLESS STEELS

Chemical Family: Metals

Formula: Not Applicable

II. PRODUCT DESCRIPTION AND HAZARDOUS INGREDIENTS/IDENTITY INFORMATION:

See Chart Inside For Listing

III. PHYSICAL DATA

Melting Point F (C): Greater Than 2550 (1400)

Specific Gravity (H₂O = 1): Greater Than 7

Vapor Pressure: Not Applicable

% Volatile by Volume (%): Not Applicable

Vapor Density (Air = 1): Not Applicable

Evaporation Rate: Not Applicable

Solubility in Water: Negligible

Appearance and Odor: Grayish to silvery odorless sheet, strip, plate, bar, structural shape, pipe or tubing.

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point F (C): Not Applicable

Flammable Limits: Not Applicable

Extinguishing Media: Use methods applicable to surrounding area.

Unusual Fire and Explosion Hazards: None

Special Fire Fighting Procedures: Use self-contained breathing apparatus for protection against degradation products and fire fighting technique or agent(s) applicable to surrounding materials.

DISCLAIMER

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The information contained in this Material Safety Data Sheet (MSDS) is believed to be correct, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material or the results to be obtained from the use thereof. User assumes all risk and liability of any use, processing or handling of any material. Variations in methods, conditions, equipment used to store, handle or process the material and hazards connected with the use of the material are solely the responsibility of the user and remain at its sole discretion.

As sold, the product described in this MSDS is considered by Ryerson to be an "article" within the meaning of Title 29 of the Code of Federal Regulations, Section 1910.1200 *et seq.* This MSDS is intended to be used solely for the purpose of satisfying informational requests made pursuant to that requirement. It is not intended to preempt, replace or expand the terms contained in Ryerson Conditions of Sale. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe workplace, to examine all aspects of its operation, and to determine if or where precautions, in addition to those described herein, are required.

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V. HEALTH HAZARD DATA

Applicable Statutory or Recommended Occupational Exposure Limits: No Threshold Limit Value (TLV) or Permissible Exposure Limit (PEL) exists for aluminum alloys. See chart inside for listing of the individual constituents.

Effects of Overexposure:

Acute - Dust or fume may cause irritation to the eyes, nose, or throat; leave a metallic taste in the mouth; result in metal fume fever; or produce flu-like symptoms.

Chronic - Aluminum: May initiate fibrotic changes to lung tissue

Bismuth: No chronic debilitating symptoms indicated from metal

Cobalt: Polycythemia, hyperlasia of bone marrow and thyroid, pericardial effusion and damage to alpha cells of pancreas.

Chromium: Skin ulceration, irritative dermatitis, allergic reaction, ulceration of the mucous membranes, perforation of the nasal septum, bronchial carcinoma, adenocarcinoma, mutagen(?)
Listed NTPARC and IARC Monographs

Copper: No chronic debilitating symptoms indicated

Iron: Siderosis

Lead: Anemia, urinary dysfunction, metallic taste in mouth, weakness, constipation, nausea, nervous disorder

Manganese: Bronchitis, pneumonitis, lack of coordination

Titanium: No chronic debilitating symptoms indicated

Vanadium: Emphysema, pneumonia

Zinc: Chromosomal anomalies in leukocytes reported. Arthritis, lameness and inflammation of the gastrointestinal tract reported from animal studies

Emergency and First Aid Procedures:

In the event of acute exposure, remove to fresh air, administer oxygen, and seek a physician's assistance.

VI. REACTIVITY DATA

Stable under normal conditions of use, storage and transportation.

For finely divided aluminum (e.g., small chips, fines):

With water: Generates hydrogen and heat slowly. Water/aluminum mixtures may be hazardous when confined.

With heat: Oxidizes at a temperature-dependent rate.

With strong oxidizers: Violent reaction with much heat generation.

With acids & alkalis: Reacts to generate hydrogen.

With halogenated compounds: Halogenated hydrocarbons can react violently with finely divided aluminum.

VII. SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Not Applicable

Waste Disposal Method: This material may be reclaimed for reuse.

VIII. SPECIAL PROTECTION INFORMATION

If operations are such that atmospheric levels of contaminants exceed prescribed limits, provide local exhaust ventilation and/or adequate respiratory protection. Consult your regional codes or code of Federal Regulations, Title 29, Part 1910.252, Welding, Cutting and Brazing, 1910.134, Respiratory Protection, and 1910-Subpart Z, Toxic and Hazardous Substances.

IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: Not Applicable

Other Precautions: Plasma arc cutting or welding can generate ozone. Overexposure can result in mucous, membrane irritation as well as pulmonary changes including irritation, congestion and edema.